**Pre-Calculus Syllabus 2016-17**

**Teacher Contact Information**

Mr. Michael T. Davis, [mdavis@latinpcs.org](mailto:mdavis@latinpcs.org), 202-223-1111

**About Pre-Calculus**

What is Pre-Calculus? I like to think of it as Algebra III & Trigonometry. It is the final course in preparation for a study of Calculus. It is supposed to serve as the math course that revisits, presents and reinforces the fundamental concepts & skills you need in order to be equipped to study and successfully learn Calculus. It calls upon you to remember, utilize and integrate all the math you have learned up to this point. Pre-Calculus is challenging and requires consistent hard work. It can be very interesting, cool and fun. The key to being successful and having fun is doing the daily homework, keeping up with the assignments, doing homework so you really learn the material, not doing homework just to get the daily points, and getting help as often as you need it. Attending math tutorial several times per week is not out of the ordinary in Pre-Calculus. If we work together, you will have a great year in Pre-Calculus.

**Topics**:

**Unit 1:** Review of Algebra II – Linear Functions, Bases & Exponentsm Factoring Quadratic Polynomials, Quadratic Functions – Converting Forms, Quadratic Functions – Finding Zeros & Graphing, Function Graph Analysis (Domain, Range, Extreme Values, End Behavior), Operations on Functions & Composite Functions, Parent Functions & Transformations, Piecewise Functions (Split Formula Functions), Inverse Functions

**Unit 2**: Polynomial & Rational Functions - Extensive Polynomial Factoring, Solving Polynomial Equations Using Factoring & Division, Creating Polynomial Equations from Solutions, Solving & Writing Equations with Irrational & Imaginary Solutions, Simplifying Rational Expressions with Multiplication & Division, Simplifying Rational Expressions with Addition & Subtraction, Solving Equations with Rational Expressions, Graphing Polynomial Functions and Writing Equations from Graphs, Graphing & Analyzing Rational Functions and Identifying Discontinuities

**Unit 3**: Exponential & Logarithmic Functions - Exponential Expressions Basic Properties & Rules, Exponential Function Graphs, Introduction to Logarithms, Log Properties & Rules and Converting, Natural Logs & Common Logs, Solving Exponential Equations without Logarithms, Solving Exponential Equations with Logarithms, Change of Base, Solving Logarithm Equations

**Unit 4**: Trigonometry (Early Concepts) - Basic Trigonometric Concepts & The Six Trig Ratios, Angles (Degrees & Radians), Special Triangles & the Six Trig Ratios, Unit Circle Coordinates & Reference Triangles, Converting Non-Special Angles from Degrees to Radians & Vice Versa, Determining Trigonometric Ratios Based on a Point on the Terminal Side, Inverse Trigonometric Functions, Arc Length of a Sector & Sector Area

**Unit 5**: Trigonometry (Graphing, Laws, Identities) - Graphing Sine & Cosine Functions, Transformations of Sine & Cosine Graphs, Graphing the Tangent Function, Modeling Periodic Phenomena with the Sine & Cosine Functions, Solving Right Triangles, Law of Sines, Law of Cosines, Trigonometric Identities (Negative Angles), Trigonometric Identities (Pythagorean), Trigonometric Identities (Sum & Difference), Trigonometric Identities (Double Angle), Solving Trigonometric Equations

**Unit 6**: Limits

**Unit 7:** Conic Sections

**Grading Configuration:**

Tests & Projects 35% Quizzes 20% Homework 15% Participation/Behavior 15% Classwork 15%

**Required Daily Supplies**

* A graphing calculator or scientific calculator. Each student must have his/her own calculator each day.
* A dedicated Pre-Calculus notebook for notes and in-class practice problems.
* A three ring binder for storing hand-outs and organizing materials for each unit.
* Pencil (traditional or mechanical) – no pens please
* Loose leaf paper for quizzes and problems to be handed in.

**Participation/Behavior**

You have the potential to earn a daily participation grade consisting of eight points. The number of participation/behavior points you receive each day will depend on the criteria listed below. If you are late, you lose one point. If you are not in dress code, you lose one point. If your lateness cause you to miss the warm-up, you lose one point. If you are uncooperative or disrespectful, you can lose up to 5 points depending on your behavior.

* Arriving to class on time
* Being in dress code
* Working on the warm-up problem(s) at the start of class in silence
* Having required materials with you in class (being prepared)
* Cooperation & participation. Listening, staying on task, being focused & exerting effort
* Having a good attitude. Behaving appropriately, being polite, courteous & respectful
* Abiding by the school policies regarding cell phone use and not eating during class

**Unit Tests**

The math department test retake policy: You have the option to retake one major unit test per semester if you score below an 85%. You must schedule a time to meet with me AND complete test corrections (not for credit) before a retake to demonstrate that you have made the effort to understand the concepts. Retakes must be completed within two weeks of the original test and will be taken either during a study hall or tutorial period.  I will average the two grades to determine the test grade.  This averaged grade will cap at 85%.

**Quizzes**

If you are absent on the day of a quiz, on the day you return from the absence, you are responsible for making arrangements with me to take the missed quiz. If you do not take the missed quiz within two days, you receive a zero for the missed quiz. For every quiz, you may take a 2nd quiz, and I will replace the 1st quiz grade with the 2nd quiz grade if the 2nd quiz grade is higher than the 1st.

**Homework**

Credit will be given for homework that is completed before the class on the day it is due. Please do homework because you want to learn the material, rather than just doing it to make me think you really did it. The school’s late homework policy states that no credit will be given for late homework.

**Lateness & Absences**

Students are expected to arrive on time each day. Being late impedes your own learning and is disruptive to my teaching and to the entire class. If you are late, please be thoughtful and enter quietly. If you are late, you must have an official note from a teacher or staff member with their signature and detailing the nature of your lateness.

Upon return from an absence, it is your responsibility to show me the homework that was due on the first day of the absence. If I give a quiz on a day you are absent, when you return to class, you must arrange a time to take the quiz. You are responsible for meeting with me during tutorial periods to gain the instruction and learn what you missed.

**Bathroom Policy**

Students will use the bathroom before arriving to class, between class periods or during break/lunch. Students will NOT leave the classroom during class time to use the bathroom (accept in the rare case of an emergency).

**Appointment Policy**

You should schedule appointments with school Counselors, Deans, The Principal and Assistant Principals at times other than class time, i.e. before 8:10, during break, during lunch, during a study hall period, or after 3:15.

**Seating Policy**

I determine the student seating arrangement in the classroom based on what I deem best for all considered. You are responsible to sit in your assigned seat each day. If you have a significant or personal issue with your seat, then you should have a private conversation with me outside of class time. If you feel strongly about seat relocation, then I will do my best to accommodate you (I cannot promise you will be able to sit exactly where you want). Again, you are NOT guaranteed your seat preference.

**Grades Discussion Policy**

I will not discuss your grade or class progress during class time. If you want to discuss your grade on a quiz, a test, a homework assignment or for a quarter, you should make an appointment to meet with me during a break, lunch or tutorial period so you and I may discuss the matter in private and not detract from class time.

**Pre-Calculus Syllabus 2016-17**

**Student-Parent Policy Agreement/Signature Page**

**Teacher: Mr. Michael T. Davis**

By signing below, I, the student, acknowledge the following:

* I have read Mr. Davis’ syllabus.
* I understood the expectations and policies for Mr. Davis’ math class for the 2016-2017 school year.
* I agree to abide by and follow the policies, requirements, and procedures stated in the syllabus.
* If I need help with any material, I will attend math tutorial 3:15-3:45.
* I will be responsible, respectful, and positive.
* I will use class time for math, not socializing.
* I will stay organized, focused, and maintain an open mind.
* I will do all assignments to the best of my ability.
* I will participate in class.
* I will exert a daily honest effort to learn the material.
* I understand that this sheet is worth 20-point quiz grade, and I will receive a zero if not completely filled out and turned in by Friday, August 26.

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

By signing below, I, the parent or guardian, acknowledge the following:

* I have read Mr. Davis’ syllabus.
* I understood the expectations and policies for Mr. Davis’ math class for the 2016-2017 school year.
* I will help my student to abide by and follow the policies, requirements and procedures stated in the syllabus.
* I understand that this sheet is worth 20-point quiz grade, and I will receive a zero if not completely filled out and turned in by Friday, August 26.

Parent Name Printed Neatly: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Best Phone Number to Reach Me: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

My Email Address is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_